



The Elixir

VOLUME 1, ISSUE 2
JULY-AUG. 2009

See also: www.tcd.ie/pharmacy/

Welcome Statement by the Chair

Dear Friends,

Welcome to the latest edition of our Newsletter from the School of Pharmacy & Pharmaceutical Sciences, Trinity College Dublin.

The summer issue of our publication comes a midst very challenging times for the country, academia, the pharmacy profession and our School.

Despite initial assurances, a difficult state of Irish finances has had a "domino" effect on academia with serious cuts in educational and research funding. The publicly-financed universities struggle with the deepening impact of the moratorium on staff promotion and recruitment.

The once booming pharmacy sector, when faced with substantial reduction of state revenues, grants and subsidies, is now finding it increasingly difficult to provide pre-registration placements for pharmacy graduates. Uncertainty surrounding the structure of the pre-registration year has added to the stress and worry experienced by our Senior Sophister students as they prepare to embark on their training year.

On a more positive note, however, the recently launched modular pharmacy syllabus is steadily progressing and the *(cont. overleaf)*



FACULTY

Head of School & Chair in Pharmacology
Prof. Marek Radomski

Dr. Catriona Bradley, Boots Teacher Practitioner
Dr. Deirdre D'Arcy, Lecturer
Dr. Carsten Ehrhardt, Senior Lecturer
Dr. Neil Frankish, Lecturer
Dr. John Gilmer, Lecturer
Dr. Andrew Harkin, Lecturer
Dr. Anne Marie Healy, Senior Lecturer
Dr. Martin Henman, Senior Lecturer
Mrs. Ingrid Hook, Senior Lecturer
Dr. Mariusz Kamionka, Research Lecturer (Merrion Pharmaceuticals, Ltd.)
Dr. Carlos Medina, Lecturer
Prof. Mary Meegan, Assoc. Professor
Dr. Lorraine O'Driscoll, Lecturer
Dr. John Quigley, Lecturer
Ms. Cecily Roche, Teacher Practitioner
Ms. Sheila Ryder, Lecturer
Dr. Astrid Sasse, Lecturer
Dr. Helen Sheridan, Lecturer
Ms. Karen Sheridan, Boots Teacher Practitioner
Dr. Fabio de Sousa Menezes, Lecturer
Dr. Lidia Tajber, Lecturer
Dr. John Walsh, Lecturer

IN THIS ISSUE.....

| | |
|---|-----|
| Welcome by the Chair | 1 |
| Faculty Roster | 1 |
| Welcome by the Chair <i>(cont.)</i> | 2 |
| Additional Faculty Information | 2 |
| Honorary Doctorate: Prof. Radomski | 3 |
| Life-Time Achievement: Dr. Corrigan | 3 |
| Strategic Alliance forged with USC | 4 |
| Welcome to new Boots Teacher Practitioner | 4 |
| Reports on Recent Postgraduate Achievements | 5-7 |

| | |
|---|-------|
| Congratulations TCD Scholarship Awardees | 8 |
| Molecular Therapeutics for Cancer Ireland | 8 |
| European COST Action | 9 |
| Announcing our new on-line journal: TCDJPPS | 9 |
| Greetings from California | 10 |
| Quick-Fire Interview: Ms. Cicely Roche | 11 |
| Update on SRPP | 12-13 |
| Recent Seminars hosted in our School | 13 |
| Recent Publications | 14 |

cont. from p1

inevitable glitches are fixed as we move along. The taught Masters programmes are attracting ever increasing number of students, both nationally and internationally. The quality and quantity of our research efforts are rising and this is reflected by the record number of PhD students enrolled on our research programmes. *Last April, we went through a periodic School Quality Review process and the External Reviewers warmly endorsed our progress on all fronts.*

This is the measure of significant achievements by all of School members: academic, administrative and technical staff and, of course, post-doctoral fellows, postgraduate and undergraduate students. Many congratulations to all of you!

More rough sea sailing ahead of us...

There is no doubt that real difficult challenges still lie ahead of us. With the continuing negative effects of educational and research funding short-falls and the recruitment moratorium

endangering strategic growth plans, it will take all our ingenuity and resourcefulness to weather the storm.

We will work hard to achieve our strategic goals by close collaboration with all national and international pharmacy stakeholders, including academia, the pharmaceutical industry and professional regulators. *We are confident that we will continue to provide the best academic and professional training for all students who choose to study in our School.*

However, even the most inventive resourcefulness will not work if the third-level institution funding falls below a critical level. We hope that this obvious reality is given due consideration before "An Bord Snip Nua" report recommendations are implemented....

Best wishes,
Marek

Prof. Marek W. Radomski, MD, FTCD, DHC
Chair of Pharmacology (1979) and Head of School
School of Pharmacy and Pharmaceutical Sciences
Trinity College Dublin

Additional Faculty Information (cont. from p1)

Directors

Director of Teaching & Learning (Undergraduate)

Dr. Anne Marie Healy

Director of Teaching & Learning (Postgraduate)

Dr. Andrew Harkin

Director of Research

Dr. Carsten Ehrhardt

Disability Liaison Officer

Dr. Helen Sheridan

Trinity Access Programmes Contact

Dr. John Walsh

Undergraduate Year Coordinators

Junior Freshman

Dr. John Walsh

Senior Freshman

Dr. John Quigley

Junior Sophister

Dr. John Quigley

Senior Sophister

Dr. Deirdre D'Arcy

Undergraduate Research Liaison Officer

Dr. Carlos Medina

Postgraduate Course Coordinators

M.Sc. in Hospital Pharmacy

Ms. Niamh McMahon

Diploma/M.Sc. Pharmaceutical Analysis

Dr. John Clancy

Diploma/M.Sc. Pharmaceutical Technology

Dr. Carsten Ehrhardt

Diploma/M.Sc. Community Pharmacy

Ms. Sheila Ryder

Diploma/M.Sc. in Pharmaceutical Manufacturing Technology

Ms. Lorna Loughrey

Complutense University of Madrid awards pioneering research by Prof. Marek Radomski Head of School of Pharmacy & Pharmaceutical Sciences

On 25th of May Professor Marek Radomski was conferred with an honorary doctorate (*Doctor Honoris Causa*) from the Complutense University Madrid in Spain, one of the oldest and largest academic institutions.

The award was given in recognition of Prof. Radomski's research work on nitric oxide, matrix metalloproteinases and, more recently, nanopharmacology and nanotoxicology.



Professor Stanley Plotkin (Johns Hopkins University) and Professor Willy Malaisse (Free University of Brussels) were also awardees.



The ceremony, in Madrid, was attended by academics and guests. Professor Colm O'Morain, Dean of Faculty of Health Sciences TCD was among the invited guests.

Sincerest congratulations on receiving this richly-deserved award!

Life-Time Achievement Award to Dr. Des Corrigan

The Helix Health Pharmacist Awards ceremony was held in the Mansion House in aid of the Pharmaceutical Society Benevolent Fund on the 9th of May 2009.

The School of Pharmacy and Pharmaceutical Sciences, TCD, was prominently featured during this ceremony thanks to great personal achievements of our staff.



Dr. Des Corrigan received a Life-Time Achievement Award to recognise 43 years of his contributions to academic and practice of pharmacy.

Ms. Sheila Ryder was a finalist for the Professional Excellence Award and **Bernard Duggan** (Sheila's research student) won the Pharmacy Practice Research Award.

Other prize winners included Tim Delaney (AMNCH), who received Pharmacist of the Year Award and Donogh Corby who are both TCD graduates as well as Noel Stenson who obtained his M.Sc. in Community Pharmacy from TCD.

Again, congratulations !

(left to right): Howard Beggs, Chief Executive of Helix Health, Ms. Cicely Roche of the Awards Organising Committee, Ms. Fiona Barron of Moroney Barron Solicitors, Lifetime Achievement Award Winner Dr. Des Corrigan, Mr. Declan Herbert

Strategic Alliance established with University of Southern California

Dr. Carsten Ehrhardt (Director of Research, School of Pharmacy & Pharmaceutical Sciences, TCD and Adjunct Faculty Member of the Department of Pharmacology & Pharmaceutical Sciences, University of Southern California (USC)), has been instrumental in cementing a new relationship between USC School of Pharmacy and our School of Pharmacy and Pharmaceutical Sciences. An academic exchange will be promoted by the two Schools for students (graduate and undergraduate), postdocs and faculty.

Dr. Ehrhardt lectured to the graduate students in USC and he was an invited speaker for the seminar series on 27th March.

The title of his talk was “Development of liposome aerosols for (lung) cancer therapy by inhalation.”

Dr. Ehrhardt took his Pharmacy Degree at the Johann-Wolfgang Goethe University in Frankfurt and Hamburg University. For his doctorate (*doctor rerum naturalium*), he graduated *summa cum laude*

in Saarland University, Saarbrücken, Germany. For two summers in 2001 and 2006, Ehrhardt worked at the laboratory of Kwang-Jin Kim of the USC Keck School of Medicine, Division of Pulmonary and Critical Care Medicine.

(below, left to right): Curtis Okamoto, Kwang-Jin Kim, Sarah Hamm-Alvarez, Wei-Chiang Shen, Carsten Ehrhardt and Daisy Shen



Welcome to our new Boots Teacher Practitioner

We would like to extend a warm welcome to **Karen Sheridan** who is our new Boots Teacher Practitioner.

Karen, a graduate of our School, has practised in community pharmacy for the past five years, and will bring great practical experience to her teaching within Pharmacy Practice.

Fáilte!

Postgraduate Teaching and Learning News: Reports on Recent Achievements...

Firstly, our congratulations go to **Dr. Ciaran Carolan**, **Dr. Thomas Greene** and **Dr. Denise Khan** who were conferred with Ph.D. degrees on July 10. Ciaran, Thomas and Denise worked under the supervision of **Dr. John Gilmer**, **Professor Mary Meegan** and **Ms. Sheila Ryder**, respectively.



By Dr. Andrew Harkin

Feature article

Role of community pharmacists in health promotion in Ireland

– **Catriona Bradley reports**

Catriona Bradley, has worked as Boots Teacher Practitioner in the School for the past four years. She was recently seconded by Boots as Head of Pharmacy Services Research and Development for Ireland. In this role she will be managing the development of pharmacy services and research initiatives within Boots. Catriona's role will also facilitate the development of collaborative research initiatives between Boots and Trinity. Catriona has recently completed her PhD entitled "An exploration of the role of community pharmacists in health promotion in Ireland". Catriona reports to the Elixir on the outcomes her project..

The overall aim of my research was to explore the role of community pharmacists in health promotion in Ireland. Although a review of international literature suggests that the role of the pharmacist has been expanded to encompass a health promotion function, there has been little formal study of this in Ireland. In this research a combination of qualitative and quantitative methodologies were used consider pharmacy-based health promotion from a number of different perspectives. Focus groups were conducted with pharmacists to explore their views on the topic. A survey and a simulated patient study were combined to explore how pharmacy staff responded to patients requesting advice on weight control. A pharmacy-based weight control service was developed, delivered and evaluated in a feasibility study. The opinions of stakeholders were sought through a series of semi-structured interviews with patient representatives and policy makers. A triangulation of results was used to ensure that the research questions were comprehensively addressed.

The findings suggested that most health promotion interventions in community pharmacies were focused on patients who were already ill and initiatives were designed to fit around existing duties. In the surveys, pharmacists indicated that they would ask more questions and provide more lifestyle related advice than was observed in the simulated patient study. In practice, information provided to patients was not tailored to their needs.

Pharmacists, policy makers and patients all acknowledged that community pharmacies were suitable settings for health promotion initiatives, but identified a number of barriers that would need to be addressed before this area could be developed. These included the way in which pharmacists were viewed by the general public and other stakeholders, lack of inter-professional relationships, remuneration structures and lack of pharmacist involvement in policy making processes. Pharmacists had additional concerns about time, staffing levels, training and inconsistencies within the profession. Policy makers and patient representatives suggested that the commercial nature of the pharmacy environment also acted as a barrier, as did the lack of research within pharmacy and the limited interaction between pharmacists and patients. Despite these barriers, the feasibility study demonstrated that a weight control programme could be successfully developed, implemented and evaluated in community pharmacy to achieve significant reduction in BMI and waist circumference amongst participants.

A conclusion of this research was that pharmacy-based health promotion in Ireland was uncoordinated and sporadic. Pharmacists, patients and policy makers all recognised that community pharmacy could be a valuable setting for health

...of which there were.....

promotion initiatives but did not have any clear ideas about how this could be achieved. The barriers which were identified from each of the studies were complexly interwoven and acted at a number of levels. Addressing any one of the barriers in isolation would be unlikely to result in any significant development of health promotion within community pharmacies in Ireland. Instead, a coordinated approach which simultaneously considers a range of issues and which is tailored to the Irish setting is needed.

This was the first study to use a multi-faceted approach to explore the role of community pharmacists in health promotion in Ireland, and provides a solid foundation for future work.

By Catriona Bradley



Meeting report

Psychoneuroimmunology in Colorado

– Lorna Gleeson reports

Lorna Gleeson is currently completing the third year of her PhD in the Neuropsychopharmacology research group led by Dr. Andrew Harkin. She is supported by a fellowship from the Irish Research Council for Science Engineering and Technology.

Following a call for submissions, Lorna Gleeson was selected and invited by the Psychoneuroimmunology Research Society (PNIRS) to attend and present her most recent research at their annual meeting in Breckenridge, Colorado in June. Lorna reports to The Elixir on the meeting and the research she presented.

The PNIRS annual meeting is attended by a diverse research community combining research fields such as neuroscience, immunology, pharmacology, psychology, behaviour and physiology. This conference was held in the

spectacular location of Breckenridge, Colorado. The diverse program covered areas from cancer to behaviour, with the emphasis placed on the relationship between the immune system and the brain. Over 200 delegates attended this conference from all over the world.

At this conference I presented my work at a trainee colloquium with senior faculty members, in a data blitz presentation and in a poster presentation. There was a lot of interest in my work and I received feedback on my results from experts in the field. This feedback has helped to provide further direction for my project. It was a great opportunity to present my work to an international audience and I was able to interact with members of other research groups and learn about the techniques used in other laboratories. I was also able to make some new contacts for future collaboration that will be invaluable to the ongoing work of our research group.

The work determined that drugs that modulate noradrenaline transmission in the CNS modulate excitotoxin-induced hippocampal injury suggesting that this system might be exploited for the development of neuroprotective agents. In particular, inhibitors of noradrenaline transport in the brain influence neuroinflammatory and degenerative changes associated with the excitotoxin kainic acid which may be attributed to changes in growth factor expression. This is a very novel finding and one that will require follow up to determine the relationship between transporter inhibition, extracellular noradrenaline concentrations and excitotoxin-induced hippocampal injury. An abstract of the work to date will be published in a forthcoming edition of the international journal-Brain Behaviour and Immunity.

By Lorna Gleeson



Photo shows the spectacular scenic surroundings of the conference venue in Breckenridge

.....many.....!

Onwards and upwards

– Dr. Ciaran Carolan reports

Dr. Ciaran Carolan recently completed his PhD under the supervision of **Dr. John Gilmer**. Ciaran now reports to the Elixir on the outcomes of his PhD project and how this facilitated his progression to post doctoral work at the European Molecular Biology Laboratory.

Upon completion of my PhD work in the School of Pharmacy and Pharmaceutical Sciences, I decided to seek postdoctoral work in research laboratories abroad, either in academia or in industry. I was offered a fellowship to the European Molecular Biology Laboratory (EMBL) to work in their structural biology unit in Hamburg, Germany, and in January of this year, I relocated to Germany to begin work there. While my current research is related to the work that I carried out in my PhD, much of my current efforts are quite a departure from my previous work. This reflects the fact that I wanted to maintain the general direction of my work while broadening my overall knowledge in the area and associated topics. I am fortunate that my PhD research in the School of Pharmacy and Pharmaceutical Sciences provided a solid basis that allowed me to expand my work in such a way.

My PhD work in Trinity involved the use of computational modelling and simulations to examine the interactions of various novel inhibitors with the enzyme butyrylcholinesterase. I used molecular docking, dynamics, conformational analyses and other similar tools in order to gain an understanding at the molecular level of why some inhibitors were excellent inhibitors of the enzyme and other similar compounds were not.

My work throughout was complemented by wet laboratory work – I made significant use of colorimetric assays to analyse enzymatic activity and used various kinetic equations to derive data from them.

The research gave me important insights into the factors that affect ligand binding to enzymes

giving me practical experience in the analysis of protein-ligand structures.

I am using the knowledge thus acquired in my new post, but my work is now focussed on making use of the experimental structures obtained from X-Ray crystallography rather than the simulated structures I more commonly used in my PhD work. The EMBL facility in Hamburg is on the site of the German national synchrotron, and the research carried out by the group in which I now work centres on the analysis of X-Ray structures in novel and innovative ways. Personally, my goals are to use X-Ray data to learn more about the quality of a ligand in a crystal structures, and to develop more automated means of identifying ligands in X-Ray crystal structures; the newly-developed techniques will be incorporated into the ARP/wARP suite of programs developed by the group. I am writing computer code to analyse crystallographic data in novel ways and to implement bioinformatic algorithms to derive results from data in more automated manners – in this regard, I am aided by collaborators in the EMBL-European Bioinformatics Institute near Cambridge, UK.

The initial stages of my new research involved much reading and learning about X-Ray crystallography techniques, computer programming, bioinformatics analyses etc. It has been refreshing to start making use of this newly-attained knowledge in the last 1-2 months. I am looking forward to the next two and a half years in Hamburg and am excited by the prospects of my work. My PhD research gave me a fundamental understanding of ligand binding to macromolecules while providing a broad base of knowledge that allowed me to direct my work towards my current area of research; I hope that by combining the techniques used previously with those more traditionally used in the field that I may obtain some exciting and interesting results in the coming months and years.

"I am fortunate that my PhD research in the School of Pharmacy and Pharmaceutical Sciences provided a solid basis that allowed me to expand my work"

By Dr. Ciaran Carolan



**Please feel free to contact Dr. Andrew Harkin
with Postgraduate Teaching & Learning News**

Congratulations to Current & Former Students...

We know that our Pharmacy students are amongst the brightest and the best in Trinity, so we were delighted to see five of our Senior Freshman students being awarded Trinity Scholarships this year.

Congratulations to the following Scholars on their great achievement:



Niamh Ennis
Helen Gallagher
Naomi Hodgins
Helen O'Donnell
Sanghee Park

Congratulations also to **Orla Ní Ógáin**, who recently completed her PhD in our School, on her marriage in June to Aidan Ryan. We wish you both health and happiness for your future together.

By Dr. Anne Marie Healy

Molecular Therapeutics for Cancer Ireland

On 25th June, Conor Lenihan T.D., Minister for Science, Technology & Innovation, announced a €5.64 million funding from Government, through Science Foundation Ireland (SFI), for the establishment of a new Strategic Research Cluster (SRC), Molecular Therapeutics for Cancer Ireland (MTCI).

Over the 5-year period of this funding award, this SRC is charged with assembling and building a fully-integrated national translational cancer drug discovery and development programme that will significantly benefit cancer patients in Ireland.



(left to right): Dr. Norma O'Donovan, DCU; Ms. Jo Ballot, SVUH; Dr. Robert O'Connor, DCU; Prof. Joe Duffy, SVUH; Prof. John Crown, SVUH/DCU; Dr. Lorraine O'Driscoll, TCD; Prof. Martin Clynes, DCU; Dr. Annette Byrne, RCSI; Conor Lenihan T.D.; Dr. Judy Harmey, RCSI; Prof. Liam Gallagher, UCD; Prof. Bill Watson, UCD; Prof. Frank Gannon, Director General, SFI; Mr. Brian Moulton, ICORG

MTCI is lead by St. Vincent's University Hospital Consultant Medical Oncologist, Prof. John Crown and involves scientists and clinicians from TCD, DCU, UCD, RCSI and 3 hospitals, including **Dr. Lorraine O'Driscoll**, School of Pharmacy & Pharmaceutical Sciences, TCD and Dr. Ken O'Byrne, St. James's Hospital, TCD.

The SRC's Industry Partners include GlaxoSmith-Kline, Pfizer, Merck Sharpe & Dohme, Novartis, Roche, Amgen, Erigal, Caliper Life Science, Anti-Cancer Inc.

Making the announcement, Minister Lenihan, said "This SRC has genuine potential to make Ireland a leading centre for cancer drug discovery and development. Today marks the latest declaration from Government that it believes in science, and greatly values the top class collaborative research being conducted in this country".

The Minister added "There is real confidence that this SRC will help to ultimately position Ireland as a key international player in the oncology research arena".

European COST Action

“Recent Advances in Histamine H4-Receptor Research”

As part of the European Cooperation in the field of Scientific and Technical Research (COST), one of the Actions entitled “BM0806: Recent advances in histamine receptor H4R research” aims to foster a multidisciplinary approach to H4R research, and to focus on the current state of play pertaining to the basic understanding and the huge therapeutic potential of this important new drug target.

Recently, **Dr. Astrid Sasse** and **Dr. John Walsh**, School of Pharmacy & Pharmaceutical Sciences have joined the 33 member Management Committee of this Action. Here they explain that the recently identified histamine H4 receptor (H4R) has attracted much interest because of its function and potential therapeutic exploitation. Principally expressed on haematopoietic cells, it plays a significant role in immune responses and inflammatory processes. The Action will create a network of European experts to foster a multidisciplinary approach to H4R research, and to enhance basic understanding and the therapeutic potential of this new drug target.

Sub objectives are a) evaluation and elucidation of critical issues pertaining to H4R function, pharmacological profile and therapeutic implementation of its ligands, b) promotion of the deployment of new instrumentation and reliable experimental models, c) development of a forum for free exchange of new concepts and training of young European scientists. The Action will originally include scientists with competences ranging from chemical synthesis to clinical pharmacology. More than 20 teams will constitute 4 interdisciplinary Working Groups: methodological approaches; basic research on physiological and pathophysiological importance; structure-activity and preclinical investigations on properties of new selective ligands; therapeutic potential of H4R and new compounds. The dissemination plan includes a dedicated website, meetings, workshops, Short-Term Scientific Missions, an open forum and a best practice template.

Financed by a 'Short-Term Scientific Mission' of this COST action, Dr. Sasse will be hosting a Post-Doc., Dr., Marco Eleopra, at the School of Pharmacy & Pharmaceutical Sciences, for 3 months.

Announcing our New On-line Journal:

The Trinity College Dublin Journal of Pharmacy and Pharmaceutical Sciences

The School of Pharmacy and Pharmaceutical Sciences feels that now is the right time to initiate a new project discussing research in the five main areas of Pharmacy and Pharmaceutical Sciences (*i.e.* Pharmacology, Pharmacognosy, Pharmaceutical Chemistry, Pharmaceutics and Practice of Pharmacy). To achieve this challenge with input from all interested parties, we have decided to launch an online publication, connected to the website of our School.

This publication will be entitled “The Trinity College Dublin Journal of Pharmacy and Pharmaceutical Sciences” or TCDJPPS. To make this journal a reality, our School is counting on TCDJPPS’s five Editors, Dr. Fabio de Sousa Menezes, Dr. Carlos Medina, Dr. Astrid Sasse, Dr. Lorraine O’Driscoll and Dr. Mariusz Kamionka. Furthermore, TCDJPPS will engage an International Advisory Board, encompassing experts from the five main areas of Pharmacy and Pharmaceutical Sciences; from Europe and Americas.

The first issue of TCDJPPS will be published in October, to celebrate the beginning of the new academic year. Subsequent issues are due in January, April, July and October 2010. For more information regarding the guidelines for publication and formatting of articles, please visit our webpage (www.pharmacy.tcd.ie/).

It is my great pleasure to coordinate this project and to launch the first issue of our Journal in October.

By Dr. Fabio de Sousa Menezes
Co-ordination and Editor, TCDJPPS



Greetings from Sunny California



Stephen Buckley, a Ph.D. student and member of Dr. Ehrhardt's research team, is performing some of his research studies in the University of Southern California. Stephen has taken time out to tell us about his experience to date.....



Currently, I am in the second month of a three month visit to the Division of Pulmonary and Critical Care Medicine at the Keck School of Medicine at the University of Southern California in Los Angeles, working under the supervision of Dr. Zea Borok, the Division Chief.

Here, I am continuing my PhD research into the molecular mechanisms which underlie epithelial-mesenchymal transition (EMT) in the lung, a proposed contributor in the pathogenesis of idiopathic pulmonary fibrosis.

The laboratory is internationally recognised for its research in pulmonary (patho-)physiology, in particular EMT. Uniquely, the lab is entirely composed of postdoctoral researchers. Given their vast knowledge and skill, my time in the lab is proving to be an invaluable learning experience.

The Keck School of Medicine is located on the Health Science Campus (HSC) of the University of Southern California (USC) and lies adjacent to the Los Angeles County (LAC)/USC Medical Center, one of the largest teaching hospitals in the United States. The University itself is one of the world's leading private research universities, with the School currently holding more than \$140 million in total federal research support.

Los Angeles is a sprawling city, approximately ten times the size of Dublin. As a result, it consists of many unique neighbourhoods including Downtown, the infamous South Central, the coastal community of Santa Monica and of course, Hollywood. I'm living in Pasadena, located just 15 km northeast of Downtown. As with any large city there's something for everyone, from the fun-laden

theme parks, to the ubiquitous shopping malls and movie theatres we all associate with LA.

For the more culturally inclined, the city has plenty of museums and galleries, multiple music venues serving the most eclectic of tastes and a truly excellent public library.

The weather makes for a nice change from the typical Irish summer. Temperatures here are currently in the thirties with blue cloudless skies a daily occurrence. I haven't seen a single raindrop for over a month now; I think I could get used to this!

The diverse background of Los Angeles' population ensures that the city is a foodies paradise. It is literally a culinary melting pot, with Sushi and Ramen restaurants filling the streets of Little Tokyo, Oriental Noodle Houses and spicy Szechuan eateries dotted throughout the mainly Chinese populated Alhambra and beyond and the countless Mexican taquerias serving authentic burritos and tamales.

Without doubt, on returning to Dublin in September I will be able to reflect on this experience knowing that what I have learned and experienced will make a positive impact on my research, not just for my PhD, but beyond and into the future.

By Stephen Buckley



What you should know about

Cicely Roche

“Who is Cicely Roche”?

Could be considered an idealist, some might say a dreamer, but is prepared to put the work behind the dreams; independent-minded but likes being part of a team; and is a believer that pharmacists need to prove the value of what they can do before they are likely to be given their ‘rightful’ place in the healthcare system. Likely to say:- I’m a Kerry-woman. If you google her name, you will most likely find reference to:- her garden.

Why did you choose to study pharmacy?

I took my father’s advice!

How & why were you attracted to teaching and research?

I love learning.

What is the focus of your teaching & why is this important?

The focus is practitioner development and an increased understanding of the significance of what pharmacists do.... Rules and regulations simply support us. Its down to us to make decisions when confronted with real patients.... And we must be able to rationalise and justify those decisions after the event, especially to ourselves.

You have experience in working in both academic and private sector. How different is the research in these sectors and how they compliment each other?

If the ‘Practice of pharmacy’ is to be researched, there must be collaboration between the practitioner and the academic. Practitioners may require up-skilling in the principles of sound ethical research, but it is they that have access to the patient at the point of care. Evidence-based practice is essential to the legitimisation of pharmacy’s claim to a ‘greater role in the healthcare system’ and, for the practice-based element of this evidence, researchers must either ‘create’ pilot studies or access ‘real patient interactions’ for raw data. I believe that the latter route is more likely to give effect to the ‘dream’ of research-lead teaching and practice-lead research.

You have been incredibly successful in your work to date. What is your achievement you are the most proud of?

Being elected President of the Pharmaceutical Society of Ireland.



When stranded on a desert island, you can request 3 items. What are they?

Husband Pat and sons Kevin and Eoin... aka a cook, an artist and a philosopher.

If you were to win the lotto tomorrow, what would you do with it?

I’d become a full-time student.

If Brian Cowen, as Taoiseach, contacts you for advice, what would you tell him?

I’d remind him that 80% of the time it doesn’t matter what decision you make, once you make a decision. The important thing is to recognise the 20% of decisions that are important ...

....and development of the pharmacist’s role in primary care is one of the 20%.

.....And finally, any advice/ words-of-wisdom for SoPP students?

Remember Kipling? ‘Your’s is the earth and everything that is in it’

Pharmacy is a wonderfully adaptable education - enjoy the experience and then get out there and create the career you want for yourself.

“Pharmacy is a wonderfully adaptable education - enjoy the experience and then get out there and create the career you want for yourself”

Summer Research Placement Programme (SRPP) in France...

As explained in the previous issue of The Elixir, the SRPP encourages pharmacy students to carry out their research projects over the summer at another University, as part of their undergraduate degree programme. Here, four of these students, **Maeve McCarthy**, **Sinead Sullivan**, **Tadhg Reddan**, and **Colm McDermott**, update us on their research and their adventures.....

My name is Tadhg and at present I am spending seven weeks in the beautiful little city of Montpellier as part of the Summer Research Placement Programme (SRPP) which offers research placements to second and third year pharmacy students both at home and abroad. Here, in the laboratory of Dr. Francoise Bressole in the Pharmacocinetique Clinique, I am studying pharmacokinetics of novel anti-malarial drugs which is both interesting and important with the increased prevalence of resistance to the anti-malarial drugs currently on the market. This is turning out to be a very rewarding experience as it has given me the chance to experience life working in a lab in a different environment to home and enjoy the French culture.



We are also enjoying the warm Mediterranean climate with hardly a drop of rain and the temperatures in the 30s everyday, it makes it nice to take refuge in the lovely air conditioned lab in which I was lucky enough to have been placed.

When the placement is over (the lab closes at the end of July due to the heat) we hope to travel around southern Europe for a while before returning to what remains of the Irish summer. Thus far this has been a really interesting experience which is a great opportunity to experience research work first hand and also to embrace another culture and I would highly recommend it to students in the future.

By Tadhg Reddan

I'm Colm and I'm a 3rd year TCD pharmacy student. I'm here in Dr. David-Emmanuel Duhault's laboratory in the Organic Department of the Faculty of Pharmacy, University of Montpellier, in the South of France, working on the total synthesis of bioactive lipids. When I applied for this placement, I didn't think about the work at all, summer in Montpellier sounded great. It still sounds great. In fact, it didn't rain for the first three weeks I was here. As the deadline approached however, I became more and more unsure about the lab aspect. I didn't know much about lipids, my french had been made pretty much redundant after sixth year and, for a while I began to think I had made a huge mistake!



As it turns out there was no reason to fear. The people are friendly and helpful. The chemistry is exciting, especially when you consider that we are working with a completely novel compound. I did a little bit of reading around the topic when I arrived, just so I wouldn't be totally lost.

The laboratory work is unpredictable. If it works it's great and you feel like you've achieved something; if it doesn't (and it usually doesn't!) it can be frustrating. Whenever that happens we sit in the sunshine with a café and a pain au chocolat and figure out what went wrong. C'est la vie! Or, as we say, c'est la chimie!

Having just finished third year, I think it's a great time to try something new. After this, you don't get much chance to look around and see what's out there. It can be a bit scary coming to a place and trying to follow reactions you don't understand in a language you only slightly understand, but that's all part of the fun. A lot less scary, I'd say, than five years from now realising that you should have given it a try and looking back and regretting it.

I would advise anyone to take part in the summer placement scheme. I know I've already learned a lot about the culture and about the chemistry here and enjoyed every minute of it! I think that if anyone else gave it a try they would feel the same.

By Colm McDermott

....and in Germany

Hi All, we are writing to you from our SRPP in Prof. Udo Bakowsky's laboratory in the Department of Pharmaceutical Technology & Biopharmacy, Philipps-Universität, Marburg.

Marburg is a city in the state of Hessen, nestled beside the river Lahn. Its claim to fame is that the Brother's Grimm studied here at its University. With its narrow, cobbled streets, old wooden houses, castle, hills and forests Marburg is exactly like something from one of their fairytales. Its other claim to fame is its ridiculously cheap Sangria.

Despite our high hopes we're only living beside the castle, not actually in it. Our worst fears were realised when we ended up in a pharmaceuticals lab. However things picked up quite quickly when we realised it was more than just spray-drying (*shudder*). The work we're doing involves producing phospholipid and sterol liposomes. These are to contain urokinase which can be delivered directly to a thrombus. This is done by applying ultrasound at the desired site of action, which will lyse the liposomes thereby releasing the urokinase. We began by producing the liposomes and measuring their average particle size, size distribution, aggregation etc. The next step was then to incorporate the urokinase into the liposomes. Using

UV spectroscopy, the amount of urokinase in the liposomes can be measured.

Our greatest scientific breakthrough to date has been obtaining a UV graph that was actually linear (and we didn't even have to make up our results!...they're now framed on our wall; Signed copies are available on request!).

Our next steps will involve measuring the loss of urokinase from the liposomes over different periods of time, measuring the degradation of the liposomes and measuring the release of urokinase in response to ultrasound exposure.

Our project also involves doing a lot of background reading-youtube, facebook and wikipedia are among the highly renowned and esteemed scientific sources which we frequently cite. It's a fight to the death if there happens to be an SS liposome project!

.....Liposomes, they're fat-tastic!

By Maeve McCarthy, Sinead Sullivan



Maeve and Sinead working hard in the lab.....

RECENT SEMINARS HOSTED BY OUR SCHOOL

| Date | Speaker | Affiliation |
|------------|-------------------|---|
| 06/10/2008 | Jack Tuszynski | Cross Cancer Institute Edmonton |
| 17/10/2008 | David S. Mantus | Cubist Pharmaceuticals/ Massachusetts College of Pharmacy |
| 14/11/2008 | Igor Nabiev | Université de Reims Champagne- Ardenne |
| 28/11/2008 | Tamasine Grimes | Royal College of Surgeons in Ireland/AMNCH |
| 27/01/2009 | Dennis Helling | Kaiser Permanente/ University of Colorado |
| 19/02/2009 | Sandra Klein | Johann Wolfgang Goethe University, Frankfurt |
| 27/02/2009 | Michael Decker | Queen's University Belfast |
| 24/04/2009 | Wei-Chiang Shen | University of Southern California |
| 16/06/2009 | Rachel Clark | University of Strathclyde |
| 26/06/2009 | Caitriona Bradley | Trinity College Dublin |

PUBLICATIONS FROM OUR SCHOOL (April-June 2009)

- Claramunt RM, Bouissane L, Cabildo MP, Cornago MP, Elguero J, Radziwon A, Medina C.** Synthesis and biological evaluation of curcuminoid pyrazoles as new therapeutic agents in inflammatory bowel disease: effect on matrix metalloproteinases. *Bioorg Med Chem* **17**(3):1290-6, 2009
- D'Arcy DM, Healy AM, Corrigan OI.** Towards determining appropriate hydrodynamic conditions for in vitro in vivo correlations using computational fluid dynamics. *Eur J Pharm Sci* **37**(3-4):291-9, 2009
- Meng J, Ovsepian SV, Wang J, Pickering M, Sasse A, Aoki KR, Lawrence GW, Dolly JO.** Activation of TRPV1 mediates calcitonin gene-related peptide release, which excites trigeminal sensory neurons and is attenuated by a retargeted botulinum toxin with anti-nociceptive potential. *J Neurosci* **29**(15):4981-92, 2009
- Sokal A, Zembala M, Radomski A, Kocher A, Pacholewicz J, Los J, Jedrzejczyk E, Zembala M, Radomski M.** A differential release of matrix metalloproteinases 9 and 2 during coronary artery bypass grafting and off-pump coronary artery bypass surgery. *J Thorac Cardiovasc Surg* **137**(5):1218-24, 2009
- Nathwani SM, Butler S, Meegan MJ, Campiani G, Lawler M, Williams DC, Zisterer DM.** Dual targeting of tumour cells and host endothelial cells by novel microtubule-targeting agents, pyrrolo-1,5-benzoxazepines. *Cancer Chemother Pharmacol* DOI: 10.1007/s00280-009-1033-6 [Epub ahead of print]
- Keely NO, Meegan MJ.** Targeting tumors using estrogen receptor ligand conjugates. *Curr Cancer Drug Targets* **9**(3):370-80, 2009
- Endter S, Francombe D, Ehrhardt C, Gumbleton M.** RT-PCR analysis of ABC, SLC and SLCO drug transporters in human lung epithelial cell models. *J Pharm Pharmacol* **61**(5):583-91, 2009
- O'Driscoll L.** Mechanisms of drug sensitivity and resistance in cancer. *Curr Cancer Drug Targets. (Editorial)* **9**(3):250-1, 2009
- Germano S, Kennedy S, Hughes L, McDonnell S, Mehta JP, Doolan P, Clynes M, O'Driscoll L.** Characterisation of Neuronal Calcium Sensor-1 (NCS-1) as a novel prognostic biomarker with potential therapeutic implications for triple negative breast cancer. *Ann Oncol.* **20**(2):49-51, 2009; Oxford University Press
- Germano S, O'Driscoll L.** Breast cancer: understanding sensitivity and resistance to chemotherapy and targeted therapies to aid in personalised medicine. *Curr Cancer Drug Targets* **9**(3):398-418, 2009
- Ruiz JF, Radics G, Windle H, Serra HO, Simplício AL, Kedziora K, Fallon PG, Kelleher DP, Gilmer JF.** Design, synthesis, and pharmacological effects of a cyclization-activated steroid prodrug for colon targeting in inflammatory bowel disease. *J Med Chem* **52**(10):3205-11, 2009
- Amado NG, Cerqueira DM, Menezes FS, Mendes da Silva JF, Neto VM, Abreu JG.** Isoquercitrin isolated from *Hyptis fasciculata* reduces glioblastoma cell proliferation and changes beta-catenin cellular localization. *Anticancer Drugs* DOI: 10.1097/CAD.0b013e32832d1149 [Epub ahead of print]
- O'Sullivan JB, Ryan KM, Curtin NM, Harkin A, Connor TJ.** Noradrenaline reuptake inhibitors limit neuroinflammation in rat cortex following a systemic inflammatory challenge: implications for depression and neurodegeneration. *Int J Neuropsychopharmacol* **12**(5):687-99, 2009
- Relihan E, Glynn S, Daly D, Silke B, Ryder S.** Measuring and benchmarking safety culture: application of the safety attitudes questionnaire to an acute medical admissions unit. *Ir J Med Sci* DOI: 10.1007/s11845-009-0352-2 [Epub ahead of print]
- Collins DM, Crown J, O'Donovan N, Devery A, O'Sullivan F, O'Driscoll L, Clynes M, O'Connor R.** Tyrosine kinase inhibitors potentiate the cytotoxicity of MDR-substrate anticancer agents independent of growth factor receptor status in lung cancer cell lines. *Invest New Drugs* DOI: 10.1007/s10637-009-9266-0 [Epub ahead of print]

We hope you have enjoyed reading the second issue of The Elixir.

A special word of thanks is due to the many contributors of articles for inclusion in this issue and also to those who contributed very useful suggestions along the way, including Prof. Marek Radomski, Dr. Carsten Ehrhardt, Dr. Andrew Harkin, Dr. Anne Marie Healy, Ms. Orla Woods (postgraduate student) and Ms. Betty Daly.

Our next Newsletter is planned for Autumn, so if you have any suggestions of what you would like to see included, Class photographs taken over the years, etc., please do let us know by sending your comments/articles/photographs by post or e-mail to **Lorraine O'Driscoll (lodrisc@tcd.ie)**.

Thank you !